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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,871	03/30/2001	David R. Stiles	4906P061	7164

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EXAMINER	
MOORE JR, MICHAEL J	
ART UNIT	**PAPER NUMBER**
2666	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/823,871	STILES ET AL.	
	Examiner	Art Unit	
	Michael J. Moore, Jr.	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-25 and 28-67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *35-59* is/are allowed.

6)☒ Claim(s) *13-25,28-34,60-62,64 and 65* is/are rejected.

7)☒ Claim(s) *63,66 and 67* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 September 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Replacement drawings of Figures 5A-5C, 7, and 8 were received on 9/13/2005. These drawings are acceptable and have been entered. However, replacement drawings of Figures 1, 3, and 4 containing Applicant's amendments (See Figures section of Remarks filed 9/13/2005) have not been received. It is requested that these replacement drawings be provided in response to this Office Action.

Response to Amendment

2. The indicated allowability of claims **13-25, 28-34, 60-62, 64, and 65** is withdrawn in view of the cited reference(s) to Tomar et al. (U.S. 6,804,248). Rejections based on the cited reference(s) follow.

Accordingly, the finality of the previous Office Action is withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims **13-16, 21-25, 28-30, and 60-62** are rejected under 35 U.S.C. 102(e) as being anticipated by Tomar et al. (U.S. 6,804,248) ("Tomar"). Tomar teaches all of the limitations of the specified claims with the reasoning that follows.

Regarding claim **13**, "a single multiplexing network element" is anticipated by TMO switch 455 (single multiplexing network element) shown in Figure 4.

"A plurality of slots to be coupled to optical fiber of multiple TDM rings through line cards installed in the slots" is anticipated by the plurality of line card slots shown within TMO switch body 500 of Figure 5 for coupling to multiple TDM rings.

"Wherein one of the multiple TDM rings is a TDM access ring coupled to customer premise equipment" is anticipated by the access loop (access ring) coupled to customers (LAN 400, ATM 405, PBX 410, etc.) as shown in Figure 4 and spoken of on column 7, lines 55-66.

"A multiple ring unit to simultaneously support multiple TDM rings" is anticipated by TMO switch 455 (multiple ring unit) coupled to the access loop and IOF ring as shown in Figure 4.

Lastly, "a full TDM cross-connect coupled to each of the slots with the same amount of high-speed bandwidth, wherein the full cross-connect is programmable to switch time slots between the different TDM rings" is anticipated by working cross-connect 820 (full TDM cross-connect) of Figure 8 that is coupled to trunk card 860 as well as tributary card 800 via the slots and backplane shown in Figures 5 and 6 with respective high-speed bandwidth.

Regarding claim **14**, "wherein a line card with multiple ports can be installed in any one of the plurality of slots" is anticipated by the trunk slots and tributary slots shown in Figure 5 used for installing trunk and tributary cards as spoken of on column 8, lines 5-25.

Regarding claim **15**, "wherein the amount of high-speed bandwidth is OC-48" is anticipated by the OC-48 connection spoken of on column 8, lines 24-29.

Regarding claim **16**, "wherein the plurality of slots number greater than 6" is anticipated by the trunk slots and tributary slots shown in Figure 5.

Regarding claim **21**, "a network element in a hubbed network office" is anticipated by TMO switch 455 (network element) shown in Figure 4.

"A plurality of line cards, wherein optical fiber from two different rings is directly coupled to the network element through one or more of the plurality of line cards" is anticipated by the trunk card 860 as well as tributary card 800 shown in Figure 8 within TMO switch 455 that couple the access loop and IOF ring as shown in Figure 4.

"Wherein one of the rings includes other network elements which are coupled to customer premise equipment by TDM access rings" is anticipated by IOF ring containing TMO switches 460, 465, and 470 (other network elements) coupled to customers (LAN 400, ATM 405, PBX 410, etc.) as shown in Figure 4 via the access loop (access ring).

"A multiple ring unit to simultaneously support the two different rings" is anticipated by TMO switch 455 (multiple ring unit) coupled to the access loop and IOF ring as shown in Figure 4.

Lastly, "a full TDM cross-connect coupled to each of the line cards with the same amount of high-speed bandwidth, wherein the full cross-connect is programmable on an STS-1 basis and is programmed to switch certain time slots between the two different rings" is anticipated by working cross-connect 820 (full TDM cross-connect) of Figure 8

that is coupled to trunk card 860 as well as tributary card 800 via the slots and backplane shown in Figures 5 and 6 with respective high-speed bandwidth.

Regarding claim **22**, "wherein one of the rings is a TDM collector ring" is anticipated by the IOF ring shown in Figure 4.

Regarding claim **23**, "wherein another of the rings is a TDM collector ring" is anticipated by the access loop shown in Figure 4.

Regarding claim **24**, "wherein another of the rings is a WDM or DWDM ring" is anticipated by the access loop shown in Figure 4.

Regarding claim **25**, "wherein the two rings are a metro collector ring and a metro core ring" is anticipated by the IOF ring (metro core ring) and access loop (metro collector ring) shown in Figure 4.

Regarding claim **28**, "wherein at least one of the plurality of line cards includes multiple ports" is anticipated by the trunk slots and tributary slots shown in Figure 5 used for installing trunk and tributary cards as spoken of on column 8, lines 5-25.

Regarding claim **29**, "wherein the amount of high-speed bandwidth is OC-48" is anticipated by the OC-48 connection spoken of on column 8, lines 24-29.

Regarding claim **30**, "wherein the plurality of line cards number greater than 6" is anticipated by the trunk slots and tributary slots shown in Figure 5 used to install trunk and tributary cards.

Regarding claim **60**, "a first and a second network element" is anticipated by TMO switches 455 and 460 (network elements) of Figure 4.

"A full TDM cross-connect coupled to every line card slot in the network element with the same amount of bandwidth connection, wherein the full TDM cross-connect is programmable on an STS-1 basis" is anticipated by working cross-connect 820 (full TDM cross-connect) of Figure 8 that is coupled to trunk card 860 as well as tributary card 800 via the slots and backplane shown in Figures 5 and 6 with respective high-speed bandwidth.

"A multiple ring unit simultaneously supporting multiple TDM rings" is anticipated by TMO switch 455 (multiple ring unit) coupled to the access loop and IOF ring as shown in Figure 4.

"A plurality of TDM access rings coupled to line cards inserted in the line card slots of the first network element to connect different pieces of customer premise equipment" is anticipated by the access loop (access ring) of Figure 4 that connects different pieces of customer premise equipment.

"The first and second network elements coupled to a first TDM collector ring through line cards inserted in the line card slots" is anticipated by IOF ring (collector ring) of Figure 4 coupling TMO switches 455 and 460.

Lastly, "a second ring coupled to line cards inserted in the line card slots of the second network element" is anticipated by the IOF ring of Figure 4 coupling TMO switch 460 to TMO switches 455, 465, and 470.

Regarding claim **61**, "wherein the second ring is another TDM collector ring" is anticipated by the IOF ring shown in Figure 4.

Regarding claim **62**, "wherein the second ring is a WDM or DWDM ring" is anticipated by the IOF ring shown in Figure 4.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims **17-20, 31-34, 64, and 65** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomar et al. (U.S. 6,804,248) ("Tomar") in view of Elliot et al. (U.S. 6,587,470) ("Elliot").

Regarding claims **17, 20, 31, 34, and 64,** Tomar teaches the apparatus of claims **13, 21,** and **60**, respectively. Tomar does not teach a protection group manager structure including a ring ID to distinguish between different rings as well as a ring map.

However, Elliot teaches a BLSR connection map manager 1160 of Figure 11 that maintains information related to ring configurations as spoken of on column 15, lines 25-28.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the BLSR manager of Elliott with the ring architecture of Tomar in order to provide a way to maintain configuration information of the network.

Regarding claims **18, 32, and 65,** Tomar teaches the apparatus of claims **13, 21,** and **60**, respectively. Tomar does not teach an east and west protection unit to identify ones of the plurality of slots coupled to a given TDM ring, as well as ports on line cards inserted in those slots coupled to the given TDM ring.

However, Elliot teaches an equipment & link state manager 1120 of Figure 11 that maintains information about the state of each slot, card and communications link as spoken of on column 15, lines 1-4.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the state manager of Elliot with the ring architecture of Tomar in order to provide a way to maintain configuration information of the network.

Regarding claims **19 and 33**, Tomar teaches the apparatus of claims **13 and 21**, respectively. Tomar does not teach the claimed line card manager structure, port manager structure, multi-ring manager structure, protection group manager structure, and network management system interface.

However, Elliot teaches a provisioning manager 1110 (line card manager) of Figure 11 that manages a provisioning database associated with network interface cards as spoken of on column 14, lines 51-56.

Elliot also teaches an equipment & link state manager 1120 (port manager) of Figure 11 that maintains information about the state of each slot, card and communications link as spoken of on column 15, lines 1-4.

Elliot also teaches a BLSR connection map manager 1160 (multi-ring and protection group manager) of Figure 11 that maintains information related to ring configurations as spoken of on column 15, lines 25-28.

Elliot also teaches a network management interface 1100 (network management system interface) of Figure 11 coupled to provisioning manager 1110, equipment & link state manager 1120, and BLSR connection map manager 1160.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the above management components of Elliot with the ring architecture of Tomar in order to provide a way to maintain configuration information of the network.

Allowable Subject Matter

8. Claims **35-59** are allowable over the prior art of record.

9. Claims **63, 66, and 67** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim **35**, the prior art of record teaches a network element including a plurality of slots containing line cards for connectivity to customer premise equipment via a ring architecture with respective high-speed bandwidth.

The prior art of record fails to teach "wherein the sum of the bandwidth to the access interfaces is greater than the sum of the bandwidth to the aggregation interfaces.

Regarding claims **36-46**, these claims further limit claim **35** and are thus also allowable over the prior art of record.

Regarding claim **47**, the prior art of record teaches a network element including a set of trunk cards as well as tributary cards coupled to customer premise equipment.

The prior art of record fails to teach "wherein the sum of the bandwidth between the full cross-connect and the plurality of line cards is greater than the sum of the bandwidth between the full cross-connect and the set of line cards.

Regarding claims **48-59**, these claims further limit claim **47** and are thus also allowable over the prior art of record.

Regarding claim **63**, *Tomar* teaches the apparatus of claim **62**. Tomar and the other prior art of record fail to teach "wherein the sum of the bandwidth of the TDM access rings is greater than the bandwidth of the first TDM collector ring".

Regarding claims **66 and 67**, these claims further limit claim **63** and are thus also allowable over the prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (8:30am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael J. Moore, Jr.
Examiner
Art Unit 2666

mjm MM

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